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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,629	04/14/2004	Hidetoshi Yoshikawa	119092	5515
25944 7590 02/27/2007 OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			EXAMINER ROE, JESSEE RANDALL	
			ART UNIT	PAPER NUMBER
			1742	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		02/27/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/823,629

Applicant(s)

YOSHIKAWA ET AL.

Examiner

Jessee Roe

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 9-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 9-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 14 April 2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

Claims 1-4 and 9-12 are currently under examination and claims 5-8 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a non-elected method of manufacturing a coil spring. Election was made with traverse in the reply filed on 13 December 2006. Applicant's election with traverse of claims 1-4 and 9-12 in the reply filed on 17 November 2006 is acknowledged.

The traversal is on the ground(s) that the subject matter of one group of claims would encompass a search for the subject matter of the remaining claims. In response, this is not found persuasive because the claims are drafted in product-by-process format and even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. See MPEP 2113. Furthermore, there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper. Therefore, the requirement is still deemed proper and is therefore made FINAL

Double Patenting

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Applicant is advised that should claims 1 and 4 be found allowable, claims 9 and 11-12 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 4, 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toshihiro et al. (JP 11-241143).

In regards to claims 1-2 and 9-10, Toshihiro et al. (JP '143) disclose a cold-formed spring made from a steel wire with a composition that compares with the instant invention as shown below and on the following page [0006 & 0030].

Element	From Instant Claims (weight percent)	Toshihiro et al. JP ('143) (weight percent)	Overlapping range
Claims 1 & 9		[0006]	
C	0.45-0.52	0.35-0.55	0.45-0.52
Si	1.80-2.00	1.60-3.00	1.80-2.00
Ni	0.30-0.80	0.40-3.00	0.40-0.80
Cr	0.15-0.35	0.10-1.50	0.15-0.35
V	0.15-0.30	0.05-0.50	0.15-0.30
Fe	substantially the remainder	substantially the remainder	substantially the remainder

Element	From Instant Claims (weight percent)	Toshihiro et al. JP ('143) (weight percent)	Overlapping range
Claim 2		[0006]	
S	0-0.020	0-0.010	0-0.010
Claim 10		[0007]	
P	0-0.025	0-0.010	0-0.010
S	0-0.020	0-0.010	0-0.010

The ranges disclosed by Toshihiro et al. (JP '143) for carbon, silicon, nickel, chromium, vanadium and sulfur for a steel wire are within the ranges claimed of the instant invention. The Examiner notes that the disclosed elemental compositions of the steel wire for a heat-resistant spring overlaps with the elemental compositions of the claimed invention. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05 I.

Still regarding claim 1, the Examiner asserts that the limitations of hardening and tempering by a high-frequency heating process are process limitations. See MPEP 2113.

In regards to claims 4 and 11, Toshihiro et al. (JP '143) disclose the hardness would be 50.5-55.0 HRC and the spring would have a residual stress at 0.2 mm depth from the surface of 600 MPa or higher [0006].

Still regarding claims 4 and 11, the Examiner asserts that the limitations of hardening, tempering, and shot peening are process limitations. See MPEP 2113.

Claims 3 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toshihiro et al. (JP 11-241143) in view of Shimotsusa et al. (US 5,286,312) and further in view of Shemenski et al. (US 5,229,069).

In regards to claim 3, Toshihiro et al. (JP '143) disclose a cold-formed spring

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made from a steel wire with a composition as shown above, but Toshihiro et al. (JP '143) do not specify wherein the tensile strength would be 1800 to 2000 MPa and the reduction of area would be 35% or higher after being hardened and tempered by a high-frequency heating process.

Shimotsusa et al. ('312) disclose an analogous steel alloy wire composition (col. 1, lines 15-35). Shimotsusa et al. ('312) further disclose suppressing the phosphorus and sulfur content because sulfur and phosphorus deteriorate the tensile strength (col. 5, lines 55-61).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the steel wire, as disclosed by Toshihiro et al. (JP '143), by suppressing the phosphorus and sulfur content, as disclosed by Shimotsusa et al. ('312), in order to achieve a desired tensile strength by routine experimentation. See MPEP 2144.05 II.

Toshihiro et al. (JP '143) in view of Shimotsusa et al. ('312) discloses a the steel wire composition with a desired tensile strength, but Toshihiro et al. (JP '143) does not specify a 35% or higher reduction of area.

Shemenski et al. ('069) disclose an analogous steel alloy wire and conducting multiple cold-drawing steps to achieve an overall reduction of area in the range of 60 to 98% in order to achieve outstanding strength and ductility (col. 2, lines 30-69).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the steel alloy wire of Toshihiro et al. (JP '143) in view of Shimotsusa et al. ('312) by conducting multiple cold-drawing steps, as

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disclosed by Shemenski et al. ('069), in order to achieve a desired reduction of area in the range of 60 to 98% with outstanding strength and ductility, as disclosed by Shemenski et al. ('069) (col. 2, lines 30-69).

In regards to claim 12, Toshihiro et al. (JP '143) disclose the hardness would be 50.5-55.0 HRC and the spring would have a residual stress at 0.2 mm depth from the surface of 600 MPa or higher [0006].

Still regarding claim 12, the Examiner asserts that the limitations of hardening, tempering, and shot peening are process limitations. See MPEP 2113.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessee Roe whose telephone number is (571) 272-5938. The examiner can normally be reached on Monday-Friday 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JR

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